



## **Role and importance of regular calibration checks and maintenance of instruments and equipment, and maintenance schedules and procedures**

- 1) Reason/importance of regular calibration checks?
- 2) Who is responsible to do the calibration checks, calibrations or maintenance on laboratory equipment?
- 3) Importance of implementing and maintaining an equipment maintenance/calibration schedule?
- 4) List 3 reasons why Work Instructions (WI) and Standard Operating Procedures (SOPs) are important.
- 5) List x3 consequences if we do not do regular maintenance

**NATA guides: Equipment assurance, in-house calibration and equipment verification**

**Session 2 & 3 learning material**



## Purpose and importance of using certified reference standards or devices

6) List reasons Certified Reference Materials (CRM) are

a. used and

**Standardisation**

**Verification of Accuracy**

**Calibration**

**Quality Control**

b. importance.

**Accuracy/Quality Assurance**

**Compliance**

**Continuous Improvement**

Session 2 & 8 learning material  
QAQC plan



## Workplace procedures for recording data and reporting results

- 7) Where is calibration data and results recorded?
- 8) What information should an Equipment Logbook have?
- 9) Procedure/system for reporting results?

Session 6 learning material

Equipment maintenance and repair  
Document Number: WI-001



## MSL934008 Maintain and calibrate instruments and equipment MSL934009 Apply Quality Systems and Continuous Improvement Processes

### Equipment manuals and warranties

- 10) What are equipment manuals and why are they important?
- 11) Consequence of doing repairs on equipment that is under warranty?
- 12) What do you do when equipment has **failed** its calibration?

[Session 3, 4, 5 & 6 learning material](#)

[Work Instructions for Analytical Balance and POVA](#)

**Basic equipment cleaning, maintenance, scheduling and storage procedures for items of equipment used**

13) List the cleaning, maintenance, scheduling, and storage procedures that are performed on a piece of equipment of your choice. (POVA, Balance, pH meter and Microscope)

- Cleaning
- Maintenance
- Storage
- Schedule

**Session 3, 4, 5 & 6 learning material**



## Sources of uncertainty in instrument or equipment operation and their control

14) For

I. Analytical Balance

[Session 3, 4/5, 6 & 7 learning material](#)

II. POVA

[Work Instructions for Analytical Balance and POVA](#)

III. Volumetric Flasks

- List Two (2) sources contributing to uncertainty (for each listed above) and how it can be managed

## Common sources of faults in the instruments or equipment used and details of their repair

15) List 2 Common sources of faults and repair for each fault.

- Damage or malfunction or distortion.
- Electrical/ Electronic Component Failure

*Refer to instrument manuals*



**Common laboratory instruments and equipment requiring calibration checks, and the function of key components, including operating principles, details of the pre-use, calibration and safety checks, and operating procedures**

16) Analytical Balance SOP – brief overview of the procedure for,

- a. Function of key components
- b. Pre-use checks
- c. Safety checks
- d. Calibration checks
- e. Operation



## Typical calibration status checks

17) List typical calibration status checks for

- POVA
- Ovens
- Timers
- pH meter

[Session 3 learning material](#)

[NATA General equipment table](#)



## **Environmental sustainability issues as they relate to the work task**

18) Identify 3 environmental sustainability issues related to working with lab instruments/equipment

## **Legal, ethical, and work health and safety (WHS) requirements specific to the work task.**

19) Explain the legal, ethical and WHS requirements of a Calibration and Maintenance technician-

- a. Legal:
- b. Ethical:
- c. WHS:

**Session 6 learning material**



**Process involved in arranging calibration, repair and/or maintenance of equipment including assessment of instrument repair status and determining if local repair or maintenance is possible and economical.**

**Refer to WI-001 Equipment maintenance and repair**

- 20)
- a. Describe the steps you would take to arrange calibration, repair, or maintenance for equipment.
  - b. How do you select an appropriate a service agent, or personnel
  - c. What criteria should you consider when evaluating the qualifications of the service agent or personnel?
  - d. how you ensure that the service or repair performed meets the requirements?
  - e. Outline the steps you would take to verify and document the service/repair completion.
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21) Provide an example of a procedure/system for each of the following,

- a. Recording data and
- b. Reporting results.

and explain on how each would be applied.

**Calibration check data procedure performed in  
Balances, POVA & Volumetric flasks**

**Session 6 & 9 Learning material**